Before the Federal Communications Commission
Washington DC 20554
In the Matter of Inquiry Regarding Carrier Current Systems,
Including Broadband over Power Line Systems
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) ET Docket No. 03-104
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REPLY COMMENTS
TO COMMENTS OF
CINERGY CORP.

Reply comments submitted by Didier Juges.

I have been professionally involved with RF, microwave and EMI/EMC design for over 25 years. I am an engineer, currently employed as designer of microwave communication subsystems used by the US government and military amongst others.
I am also an amateur radio operator Extra class, call sign KO4BB.

In the following, I have included original comments by preceding them with "Cinergy>" and my responses immediately below the comment preceded by "DJ>".

Cinergy> Cinergy is conducting ongoing trials of Access BPL in conjunction with Current Technologies, LLC, of Germantown, Maryland. These trials include the operation of low-voltage and medium-voltage integrated systems in Cincinnati, Ohio. Current Technologies is operating its BPL equipment at dozens of Cinergy's transformer locations, enabling over 400 homes, and serving more than 100 households, with BPL broadband access. High-speed Internet access in the trials achieves speeds over 2 megabits/second (four times the speed of DSL). In addition, we plan to use the BPL communications channels in support of utility functions, as discussed below.

DJ> Similar trials have been monitored by ARRL and have shown very significant, continuous emissions over spectrum currently assigned to other service licensees, such as the Radio Amateur service and the Broadcast service, among others. If anything, this demonstrates that this technology is not suitable, since it only provides a marginal capacity improvement over DSL (and capacity significantly below that of cable) at the cost of rendering useless the HF spectrum, for all practical purposes.

Over coming years, it is foreseen that the need for broadband access will only increase, with such services as video on demand. Since Access BPL's capacity is a direct function of the amount of radio spectrum it pollutes (and also limited by its capacity to resist interference), any capacity increase in Access BPL will come at the expense of more and more current FCC licensed services. Unlike concurrent technologies, this technology is limited from the starting gate in its capacity for expansion.

Cinergy> Cinergy strongly concurs with the Commission's oft-stated conclusion that "competition, not regulation, holds the key to

stimulating further deployment of advanced telecommunications capability" and suggests that the market place provides the best forum to foster the continued cooperation and technical compatibility necessary to successfully develop BPL.

DJ> I certainly agree that technological development is not accomplished through regulation. However, the commission has an important role in steering commercial development efforts in those directions that are of greater benefit to the public. In that role, the commission must recognize and protect current users of the spectrum. The way the FCC fulfills this role is by enacting regulation. A "free-for-all" market would benefit no-one and there would be no need for an FCC in a "free-for-all" society.

Cinergy> Cinergy sees two main benefits to BPL. First, it has the potential to deliver broadband anywhere that power lines go, which is almost everywhere that people live and work. Second, in areas where other forms of broadband are available, BPL can provide additional, facilities-based competition that will foster innovation, better service and competitive pricing.

DJ> Access BPL is not the only technology that could be used to provide broadband service anywhere that power lines go. Power utility companies have for a long time fitted fiber-optic cables to their power line grid for network monitoring and other functions. Fiber optics have the capacity for far greater bandwidth, and are immune from radiated or conducted susceptibility and free from radiated or conducted emissions. Far fewer repeaters are needed to carry optical signals over long distances, and no special devices are required to bypass transformers. Fiber optic technology is capable of many gigahertz of bandwidth in a single fiber, with none of the electronic environmental aspects of Access BPL.

Cinergy> Cinergy agrees with the Commission that the ubiquitous availability of broadband services will "bring valuable new services to consumers, stimulate economic activity, improve national productivity, and advance economic opportunity for the American public."

DJ> This is not an endorsement of any particular technology. Certainly a technology that has that potential, and also the potential of severely affecting other current services should be rated as less desirable than one that does not have these negative aspects.

Cinergy> Much as electrification was key to creating economic opportunity early in the twentieth century, in the twenty-first century it is broadband that will lead the way to enhanced educational opportunities, job creation, and economic growth. Yet today broadband access, via cable and DSL, is limited to more densely populated areas. BPL has the potential to bring broadband to everyone.

DJ> Cinergy is making the argument here not about bringing a competing service, but bringing the ONLY service to areas of the nation not already wired for broadband. The reason that many areas of the country are not wired for broadband is not that there is no technology available for such deployment, it is that the cost of

bringing broadband to sparsely populated areas is prohibitive, in consideration of the potential revenue for the investors. Cinergy goes to length in latter part of their comment to describe the cost of equipment used for Access BPL and even asks the commission for regulatory relief for this equipment. If this equipment is so costly, why should we think that Cinergy will go right to work and provide broadband access to these sparsely populated areas?

The same argument could be made that telephone service is typically available everywhere there is human activity. DSL is already a maturing technology, which does not have the formidable technological obstacles that Access BPL would be facing in a nation wide deployment. It is unclear to me, considering the cost of the technology, as pointed out in Cinergy's own response, why Access BPL would be easier to deploy than DSL or other power utility fiber optic network which is already in use.

Cinergy> Where broadband is already available, BPL will stimulate competition with attendant benefits that the Commission has consistently recognized: We believe that by promoting the development and deployment of multiple platforms, competition in the provision of broadband capabilities can thrive, and thereby ensure that the needs and demands of the consuming public are met. Further, the addition of BPL facilities-based technologies will, as correctly recognized by the Commission, enhance homeland security by "creating new facilities to provide redundancy."

DJ> Access BPL is probably the least reliable broadband access method as far as homeland security is concerned, as it is part of the power grid. Any enemy intent on inflicting serious harm to the economy of this country would target the power grid first.

Cinergy> The enhanced power distribution services that BPL may potentially permit include:
automated meter reading, which enables time-of-day billing and hence lower energy costs for off-peak use;
automated outage detection, which otherwise must rely to a large extent on customers phoning in;
load management, to minimize costs and maintain reliable service in the face of customers' changing energy needs
power quality monitoring to detect faulty components before they fail; and
substation monitoring for maximum reliability.
Using BPL systems for load profiling and control, time-of-use electricity control, remote control of major loads, and outage detection offer potential benefits not currently available to utilities in an economically feasible form.

DJ> It is hard to imagine that Access BPL would be the only, or even the most practical method of providing these services. It is also hard to imagine that power utilities would have been waiting for this technology to become mainstream before developing these services for themselves, if they are so critical to their operation.

Cinergy> Cinergy respectfully requests that the Commission refrain from regulating the nascent BPL industry in ways that might threaten its early survival. Cinergy strongly supports the Commission's

longstanding conclusions that market forces best promote the development and deployment of broadband technologies. Similarly, market forces can best resolve technical issues. At this very early stage in the BPL technology life cycle, it would be premature for the Commission to freeze particular solutions in place through regulation - indeed, at this time, it is impossible even to know what problems, if any, may arise that might necessitate regulatory intervention.

DJ> Now more than ever the American public needs the commission's help in steering commercial technological developments in directions that have the most potential for long term public benefit, not just the short term pecuniary benefit of the power utilities. Access BPL is a technology with severely limited potential for growth and with a great potential for disrupting existing services, which the commission is in charge of protecting

Cinergy> Each utility and BPL provider should be permitted to explore commercial and technical arrangements that they believe will be efficient and will protect both utility systems and the consumers they seek to serve. Any attempt to impose regulatory constraints on the nascent technology of BPL will only increase the cost associated with that technology, hinder innovation, and delay the public benefits that represents the potential of BPL.

DJ> Now is the time to recognize that this technology is not the answer, before too much effort is put into it.

Respectfully submitted to the Federal Communication Commission,

Didier Juges
August 10, 2003